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THE JOURNAL OF PHILOSOPHY

THE CAUSAL UNIVERSAL

CAUSAL universality is required for comprehending empirical objects. In experience we come upon a world of realities. It contains recognizable objects with determinate properties, in determinate relations, forming kinds, systems, and organizations. This discovery is due on our part to our ability to grasp recurrent and coördinated relations among empirical data. But a condition of the discovery is the fact that the data manifest a certain kind of universal, the *causal universal.*

The causal universal has metaphysical relevance. Metaphysics is the study of the intelligible structure of existence. Now the intelligible structure of the world is that by which it is a world of objects, properties, relations, kinds, systems, and organizations. The universality required for such structure therefore determines the fundamental form or forms of reality. This is the reason for the central rôle of the formal universal in Aristotelianism or the concrete universal in objective idealism. I shall not here discuss these traditional versions. I wish primarily to try to identify the type of intelligible universal implicit in common sense and science. Such universality would be central to an empirical metaphysics.[1]

Evidence for the need for causal universality in comprehending empirical objects lies in the contrast between the fragmentary multiplicity of experiential data and the unity of the concepts by which they are understood. Wherever one has to do with an objective reality, one has there to distinguish between the data by which the object is manifested and the unitary meaning by which the object is comprehended and according to which the data fall into place within a coherent scheme. Without such unitary meanings it would be impossible for us to conceive of a world of objective realities.

The function of the intelligible concept is to synthesize the fragmentary manifold of experiential data, bringing them within a system of possibilities of which they form a subset of actual instances. Successful fulfilment of this function can occur only by means of a universal of a particular kind.

[1] For a discussion of the conception of metaphysics behind these remarks see the writer's article "A Conception of Empirical Metaphysics," this JOURNAL, Vol. XLV (1948), pp. 421–435.

(2) *Disposition concepts involve causal universality.* Among the most common of empirical concepts are those of powers or dispositions of things. Every power is definable by reference to a causal law. A concept of a power is used to formulate how a thing will respond to a variety of differing though related circumstances. For instance we use the concept of fragility to synthesize the manner in which the fragile object will respond, in the way of fracture, to varied applications of stress. There is implicit in the concept a law which expresses a causal relation between stress and fracture. To be fragile is to be easily fractured. The concept "ease of fracture" is analogous to concepts of physical magnitudes such as elastic constant, specific heat, mass. It is a rough measure, without quantitative accuracy, of the relation between stress and fracture. It forms an element in common-sense physics, as exacter magnitudes do in scientific physics.[2]

Disposition concepts involve causal universality in application to a *single* individual. When we judge that the individual object *A* is very fragile, we imply that under various conditions of stress *A* would respond variously in its degree and manner of fracture. What we mean would be designated in an infinite set of hypothetical propositions relating stress-antecedents with fracture-consequents. The singular judgment "*A* is very fragile" is therefore, on one score, universal. It predicates of its singular subject *A* a property which imports a certain constancy (universality) whose particulars are pairs of stress-fracture events considered as real possibilities.

Since the purpose behind formation of a disposition concept is to grasp how the object will respond to a variety of conditions, this universality *must* be present. Such a purpose can be achieved only by means of a universal connection between conditions and results. It requires a causal universal. In the actual history of an object only some of these really possible pairs of events will occur. They constitute a fragmentary manifold as compared with the entire set of really possible pairs. But this fragmentary manifold is *understood,* becoming for us something more than a mere factual group, i.e., becoming for us manifestations of a power only when its members are conceived as instances of the universal. We are then able to predict and to explain a single fracture by reference to the potency and the condition.

[2] We may even think of a qualitative sort of ratio, not defined as an arithmetical fraction but expressing a relation, dependent on the notions of more and less. This ratio, of degree of fracture to stress, comes fairly close to the idea of "ease of fracture." There seems little doubt that the appearance of such a concept in common-sense thinking signalizes the empirical discovery that degree of fracture is "proportional" to stress.

Every disposition is such a causal universal which, being predicated of an individual, relates its responsive behavior along a certain line to circumstances along a certain line. When we understand an object as having a potency, we grasp in a singleness of meaning the entire multiplicity of really possible pairs of circumstance-result events. We see every actual case of a conjunction of circumstance and result as an actualization of one of these and, consequently, as a manifestation of the power. And since it is primarily by virtue of groupings of powers that we classify things into kinds, we would not be able to make even that first step toward understanding the world without the causal universal.

(3) *The concept of position involves causal universality.* Disposition concepts, as referring to possibilities of change of position or state, are distinguished from concepts of positions and states themselves. These latter concepts, however, also involve what we are here calling causal universality.

If we are to conceive a space-time position as empirically objective, it must be conceived as unique, different from but related to all other possible positions. This must be by a definite concept. Singling it out for comprehension as unique by such a concept involves relating it to other possible positions by a definite kind of relation. This required reference to all other positions constitutes the intelligible universality belonging to the concept of a particular position.

To identify a position one has to observe some event (e.g., a noise, a flash) which will then be said to have occurred at that position. But to say that the event occurred *at the position,* one has to be able to trace relations between the occurring event and other (actual and possible) events by virtue of which one can decide that *there is a position at all for the event to occur at.* We can assert that there is a given position, as an empirical reality, only if we are able to discover empirically a space-time in which the position is an element. There will be a position for the event to occur at, if and only if events in general obey laws which implicitly define some kind of space-time, i.e., obey some system of geometrical laws. Hence the assertion that an event occurs at a particular place-time involves the assertion of a universal connection.

For instance, if an event occurs at the position *a,* then, should another event also occur, the pair will be separated by a certain interval (perhaps null); and this holds for *any* other event. Unless there is such an interval we can not say that the event occurred at the position. The uniqueness of the position *a* is de-

termined by the uniqueness of the set of all intervals separating any event occurring at a from all other possible events. Of all logically possible intervals, only certain are selected as belonging to this set.

This universality is plainly not of the type usually called "causal," in the narrow sense connected with changes. The law that any two events will have an interval between them is not usually conceived as stating a causal fact. Yet in the broader sense first conceived by the Greeks—a causal connection is one which can function as a principle of explanation—this is a causal law. One can explain why there is an interval between two given events by showing that they are different events and adducing the law. The pattern of determination that connects a difference of events with the existence of an interval separating them expresses one aspect of the intelligible structure of space-time or the geometrical constitution of the empirical world.[3]

(4) *State-concepts and thing-concepts involve causal universality.* In somewhat similar fashion, concepts of states involve an essential universality so long as they are to represent objective fact. Suppose that a quantity of sugar is in a state of solution in water. There are tests for the presence of sugar in aqueous solution. If we are to define or conceive definitely of the state-concept "being in solution" we do it (on an elementary level) by selecting one or more such tests. These depend on the use of laws, i.e., on reference to the universal behaviors of a sugar solution with respect to ways of operating on it. They involve, therefore, a causal universal.

Again, having a certain color is being in a state of color. For common sense this concept functions so as to order the variety of possible color appearances in correlation with the variety of possible positions and states of the observer and conditions of the medium. The degree to which this ordering occurs varies with the degree of knowledge about the behavior of colored objects, media, and observers. At the minimum, even the normal common-sense test of the presence of a definite color requires a certain universality. An object is green if it looks green to *any* normal observer in normal daylight in a normally homogeneous medium.

But the universality of the common-sense color concept goes beyond this intersubjective agreement. As Husserl says:

[3] On this broader notion of causality and the general sense of "real necessity" connected with it, see the writer's article, "Causality and Necessity," this JOURNAL, Vol. XLVI (1949), pp. 257–270. The conceptions of causal connection, real possibility, real necessity, and explanation there developed have been presupposed in the writing of the present article.

> The colour of the thing seen . . . appears, but even while it is appearing the appearance can and *must* be continually changing, as experience shows. The same colour appears "in" continuously varying patterns of *perspective colour-variations*. Similarly for every sensory quality and likewise for every spatial shape! One and the same shape (given *as* bodily the same) appears continuously ever again "in another way," in ever-differing perspective variations of shape. . . . Every determinate feature has *its own* system of perspective variations; and for each of these features, as for the thing as a whole, the following holds good, namely, that it remains one and the same for the consciousness that in grasping it unites recollection and fresh perception synthetically together, despite interruption in the continuity of the course of actual perception.[4]

The occurrence of data which may be treated as selections from a complete set of perspective variations is also at the basis of the attempt of empirical philosophers from Berkeley to Russell to "eliminate" substantial things in favor of constructions of sense data. Without raising the question here of the possibility of such elimination or of the precise type of unity involved in the concept of the substantial thing, one may nevertheless observe that to define a thing by reference to a set of appearances, actual and possible, such as would occur under varying conditions, is to indicate clearly the universality, causal in our sense, which constitutes the "identity" of the thing. We conceive of something as a single thing, as "selfsame," in the very act of conceiving its various appearances or manifestations together, as falling into a system of perspective variations. Indeed, as Russell defines this system, it is describable by the use of "intrinsic laws of change of appearance" or "laws of perspective."[5] If these are actually laws, then they can serve for explanatory purposes. They are causal in our sense of the term, even though they may not all deal with changes of state. Thus Russell's thing-system is conceived by means of a universal synthetic connection of conditions and results which functions in an explanatory manner. It is another illustration of the causal universal.

(5) *The causal universal is a certain kind of relational invariant pertaining to a singular entity or individual system.* All the above instances of objective concepts, relating to powers, positions, states, and things, exhibit causal universality. We experience only a finite subset of manifestations of a power, intervals between events, appearances of a state, aspects of a thing. Yet to comprehend these finite experiences we introduce concepts which portray

[4] *Ideas*, transl. by W. R. Boyce Gibson, Macmillan, New York, 1931, pp. 130–131.

[5] *Analysis of Mind*, George Allen and Unwin, London, 1921, pp. 97 f. and 106.

infinite sets of possibilities as real possibilities, excluding others as not allowable or available to the subject.[6] That is, we conceive of the fragmentary data as instances of laws. Only in this way do experiential fragments come to signify the presence of objectivities. Only in this way does the world become intelligible to us.

Let us pose the following problem: *Of what nature must a concept be which expresses a universal and which, in doing so, expresses a principle of intelligibility, so that when predicated of some subject it exhibits a pattern of determination by which some part or the whole of the causal-intelligible structure of the subject is constituted?*

If a universal is to be a principle of intelligibility, it must essentially incorporate a relation connecting items in a pattern of determination. The relation must be expressible in a law or an order of laws, for otherwise the connection would not be appropriate to a pattern of determination. Thus the causal universal essentially involves lawful relation. And conversely, every lawful relation, being a universal connection of items in a pattern of determination, provides a causal universal. The intelligible concept is a concept definable in terms of lawful relations. Its constitution depends on the kinds of laws involved and the kinds of terms related in accordance with the laws. The causal universals of common sense, depending on crude, qualitative, elementary forms of law, will therefore compare with those of advanced theoretical thought as the rudimentary to the developed. This is a central feature of the continuity of intelligence in its varied operations.

The distinctive traits of the causal universal are shown articulately in those concepts in the physical sciences which are explicitly defined by the use of laws. Among the simpler examples are constants defined by laws in which they occur. Thus Ohm's law may be used to define the property of resistance. An object has the resistance whose numerical measure is R if, for any applied voltage V and associated current I, the ratio of V to I is constant and equal to R.

There are two elements of universality involved in the concept of resistance. First, resistance is defined so as to be applicable to all material objects. It is a "one-in-many," where the many are the many objects partaking of a resistance. This universality, however, which I shall call *extrinsic,* is not the one which figures in making "resistance" a causal-intelligible concept. That function is performed by the second element of universality, pertaining

[6] On the notion of an "allowable" or "available" possibility see the article "Causality and Necessity" referred to above.

to the multiplicity of voltage-current combinations allowed as really possible with respect to any given *single* material object.[7]

If the single object A has a particular resistance R, there is a law, and hence a universal, *intrinsic* to A's behavior. The ratio of voltage applied across A to current flowing through A is constant. Regardless of what may be true about *other* material objects in this respect, A, as an individual, exhibits a regularity of the type of law in its behavior. If the voltage is so-and-so then the current is such-and-such, and conversely. These implications are of the causal lawful type, involving real necessity. The "one-in-many" here is the lawful relation between voltage and current values, expressed compendiously in the functional equation $V/I = R$. And the "many" consist in the entire set of really possible pairs of voltage and current allowed to A in accordance with the law of its resistance. These are the pairs by which one would tabulate the functional relation and which are represented by the graph of the equation.[8]

The "one" or universal is thus a unity of possibles. The possibilities are particular possibilities, pertaining to the particular A. And equally the universal, as a unity of the different particular possibilities pertaining to A, is in this sense *intrinsic* to A. It is a universal characteristic of distinct real possibilities with respect to an individual. It is also a relational universal, connecting by causal implication one element in each possible combination with the other element of that combination.

These observations suggest the distinguishing marks of the causal universal and lead to the solution of the problem of the intelligible concept. *The causal universal is a relational universal, connecting by causal implication elements in possible combinations of facts or traits pertaining to individuals. It is an invariant among the real possibilities relating to some singular entity or individual system.* It is the general type of which the mathematical causal-functional relation used in the natural sciences is a species.

[7] See the writer's article "Generality and Singularity in Historical Judgment" (this JOURNAL, Vol. XLII, 1945, pp. 57–65) in which it is argued that the difference between universal and singular judgments which are to represent objective, intelligible fact is more grammatical and functional than anything else.

[8] The relation between V and I is a biunique functional relation in this instance. It is equivalent to an infinite set of hypothetical propositions of the type: "If the voltage across A is 3 volts, then the current through A is 1 ampere," "If the current through A is 2 amperes, then the voltage across A is 6 volts." These propositions relate voltages and currents in such a way that the entire set of hypotheticals can be summarized in the single statement: "The resistance of A is 3 ohms."

In every case in which we grasp a fact as intelligible by means of a causal universal, we are presented with something of the nature of a singular and with different real possibilities allowable to it and coherently related by the fact that all the possibilities are combinations which afford instances of a universal mode of causal implication. This provides a pattern of determination. The advance by thought to actuality is made by introducing, as condition, some appropriate portion of a possible combination which is actual, thus determining the remainder as also actual. We then grasp an actuality complete in the sense of instancing such a pattern.

(6) *The concept of objective purpose also illustrates this notion of the causal universal.* This is important to observe because it has been frequently supposed that purposive and mathematico-functional explanation are essentially different, a supposition which has been used to defend a radical dualism in human intelligence.

The concept of objective purpose is a causal concept. Its essential function is to serve in formulating principles of determination by which behavior is explicable. As in the case of resistance, the concept has *extrinsic* universality. It is applicable to a multiplicity of creatures. But also, as before, its explanatory power is due, not to the fact that it is repeatable in different individuals, but to what it does in synthesizing, by an *intrinsic* universality, the real possibilities pertaining to an individual.

In attributing a purpose to an individual, we suppose that he is disposed for acting in a particular way. This disposition is a readiness to follow a sequence of means-end actions leading to a particular goal.[9] The sequence is not uniquely fixed. There are, for example, different ways of overcoming the same obstacle. Again, with the same goal, the purposing creature will be called on to make a variety of efforts in adaptation to a variety of conditions. Thus the purposing creature is disposed with respect to *a variety of possible sequences of actions.* The sequence actually followed depends on the situations which present themselves as time goes on. So the creature may adopt any of a number of procedures suitable for reaching the goal, whereas it will avoid others that would tend to lead it astray, and be incapable of still others.[10]

[9] This statement is too simplified to do justice to the situation. Sequence is too simple an organization to account for the structure of related activities having to do with ends. See the remarks of E. C. Tolman on the inadequacy of chain-types of combination, *Purposive Behavior in Animals and Men,* Century, New York, 1932, p. 178 and Fig. 61, p. 177.

[10] Again, this description is too simple, since it does not take into account the occurrence and significance of error, vagueness, indecision, and the like. A complete objective teleological judgment involves specification of the individual's sensitivities to conditions (including modes of interpretation of the

This means that when we attribute a purpose to an individual we distinguish, from among all logically possible combinations of circumstances and response, a certain subset as those which are allowable or really possible. Should the circumstances be such-and-such, the individual would respond thus-and-so. We are able to conceive a purpose clearly to the extent to which we are able to conceive clearly of a set of such causal implications. And an individual *has* a definite, clear, and fixed purpose only to the extent that he is so disposed as to respond in definite manners to definite circumstances.

The concept of objective purpose therefore refers to a set of really possible modes of response to circumstances. These are the "many." Their unity, the universal, is to be found in the way in which each of the adaptive sequences is a mode of reaching the goal. *Attribution of a purpose to an individual amounts to predicating an intrinsic universal as characteristic of distinct really possible sequences of the individual's behavior, a universal which is a relational invariant, connecting by causal implication patterns of stimulus situation with patterns of response.* The concept of purpose has explanatory power because it has this structure. By means of such an intrinsic relational universal, involving a schedule of causal implications, we make a selection of real or allowed possibilities, and hence, given the pattern of stimulus situation, the pattern of response follows with real necessity.

(7) *The meaning of a law of nature is illuminated by this conception of the causal universal.* We have said that the *extrinsic* universality of the concept is not the factor constituting it an instrument of explanation. On the other hand, it is now feasible to observe that extrinsic universality may also be put to use in formulating an *intrinsic,* hence intelligible, universality. This is what happens in the case of universal laws of nature; attention to it helps to provide insight into their meaning and intellectual function.

Consider the law which asserts that every metallic object is a conductor. Because conductivity is an extrinsic universal it can occur as predicate in such a universal judgment. But the law also involves the concept of a causal universal—not conductivity, but another concept constructed with the aid of the concepts of metallic object and conductivity—and by this means we are able to express an intrinsic causal invariant *whose individual subject is the existent universe.*

meanings of their constituents and of the whole), habits and techniques, as well as the goal and the schedule and organization of goals.

A law such as the above is not a merely generalized material implication. It speaks of possibilities, making a selection of real from among logical possibilities. Let us consider two devices for expressing its content.

The first is that of possible worlds. On this approach the universal affirmative "All S is P," when meant as the expression of a causal law, takes as its subject not any possible world nor the totality of possible worlds but the world of actual existence. It is conceivable that there should be a world in which (or that the actual world should have been such that) *being metallic* and *being conductive* are not causally connected. In such a world it would be false to say that were an inhabitant of it metallic, it would be conductive. Thus the law does not assert that were an object in any conceivable or logically possible world metallic, it would be conductive, but only that were an object in the actually existent world metallic, it would be conductive.

The second device is that of possible objects. The universal causal affirmative does not say of all logically possible objects, that, e.g., were they metallic they would be conductive. For one logically possible object is an object exactly like this copper wire on my desk with the exception that it does not conduct. Of this object it is false to say that were it metallic it would conduct; that would be true only if, to the supposition that it is metallic, we adjoin the supposition that it exists. If the causal law "Every metallic object is a conductor" is true, then, if this object were to exist and be metallic, it would have to be a conductor. And since, by supposition, it is not a conductor (for I conceive it so), I infer that it can not exist. While it is logically possible, its concept being without self-contradiction, it is not really possible, in virtue of the causal connection between *being metallic* and *being conductive*. Consequently the law asserts this connection about objects under the supposition of their existence. It says: "For anything whatsoever, existent or not, should it exist and be metallic, then it would conduct." That is, the logical possibilities excluded as not really possible or allowable are those in which objects exist, are metallic, and yet do not conduct.

In terms of either of these devices, the universal causal law refers to existence.[11] It may be read as attributing a certain property Q

[11] Neglect of this reference leads to the error of methodologizing metaphysical concepts. For instance Dewey speaks of the abstract universal proposition as non-existential (*Logic*, Holt, New York, 1938, p. 257) and says: ". . . such propositions do not intend or purport to have reference to existence but to be relevant to *inquiry into existence*—a very different matter" (*ibid.*, p. 308). Accordingly he tends to treat them as definitional in character and of methodological import rather than as empirical hypotheses. He is led

to the actual universe U. (By the actual universe I mean the class or whole of all actually existing things, past, present, or future.) The property Q is definable in either of two ways:

(1) A class or whole has the property Q if and only if, should something belong to the class or whole and should that thing be S (metallic), then it would be P (conductive). Here the hypothetical relation in the definiens is that of real, synthetic necessity.

(2) A class or whole has the property Q if and only if, among all the logically possible conjunctive combinations of the logical possibilities *x belongs to the class or whole, x is S, x is P,* and their negatives, only those of the form *x belongs to the class or whole and x is S and x is not P* are excluded as not really possible or allowable.

On either of these definitions the law "All S is P" states "U is Q." Read this way, Q is a causal universal. There is a singular system, the actual universe U, of which it is predicated. Pertaining to this individual system are distinct really possible combinations, each of which is an instance of a universal mode of causal connection of the form "Should x belong to U and should x be metallic, then x would be conductive." Thus when we predicate Q of the universe U, we are predicating an intrinsic universal as invariant among the distinct really possible combinations of constituent facts. This universal is relational, connecting by causal implication the components of these combinations. *By means of such universals we begin to comprehend the actual universe as an individual whole, i.e., as a cosmos.*

(8) *The intellect is a unity.* The foregoing considerations tend to indicate that a single type of function reappears in varied contexts. Intelligence is one and continuous. From the lowest reaches of everyday perception and judgment to the highest abstractions of theoretical inquiry there is an identical aim in the workings of the human intellect. Because and inasmuch as facts and entities exhibit the linkage of causal universality, they are intelligible. And the aim of the intellect is to recognize and understand by means of the causally universal concept.

What we observe on the human side is a characteristic tendency of our mind, the manner in which it produces its distinctive product in knowing. Were we to understand how and why our mind operates in understanding, in achieving the causal universal, we should in that very act grasp the particular causal universal in terms of

to this because he supposes that the assertion of a relation between possibles can not be an assertion of empirical fact, as though the only relations of possibles are logical in character. Give up this assumption, and the notion, later developed (Chapter XXII), that causality is simply a logical form assumed by subject-matter as a result of inquiry into it, imposed almost as an artist imposes form on clay, must be abandoned.

which the intellect itself must finally be defined. For the intellect is an active power, at work on different occasions, in varying circumstances, with a diversity of materials. The difference in the product, coupled with differences in occasion, circumstance, and material, is precisely the evidence for and manifestation of this unity of nature.

In common-sense and technical science, in qualitative and quantitative thought, the method of understanding is the same. Different degrees of determinateness, accuracy, depth of conceptual organization, different emphases in the categorial structure of actual thought, correspond to differences in the needs of the situation in which intelligence is brought into play.

They correspond also to differences in the extent and depth of the intellect's penetration into the nature of things.

ALBERT HOFSTADTER

NEW YORK UNIVERSITY

ACQUAINTANCE AND DESCRIPTION AGAIN

I

MY aim in this brief essay is to analyze a nexus of ideas which has played a most significant rôle in the development of the climate of contemporary epistemological opinion. Springing from Lord Russell's work in the early years of this century, and finding its clearest formulation in his lectures on *The Philosophy of Logical Atomism*,[1] this cluster of ideas soon gave convincing evidence of its power to define a point of view, and today there are few empirically-minded philosophers who do not show its influence. At the center of this conceptual structure is the thesis that has come to be known as the *Principle of Acquaintance*, and even, on occasion, as the *Principle of Empiricism*. This thesis has been given many formulations. To the historically minded it is but the most recent and most sophisticated form of a tradition which can be traced through John Locke to Aristotle; though only in the last fifty years has it been applied to particulars as well as to universals. Since, however, my purpose is systematic rather than historical, I shall state it in my own words, and in the thoroughgoing form in which, at one time, it seemed to be to me almost a self-evident truth. Thus conceived, the principle consists of a "preamble" which formulates certain of its more immediate presuppositions, and two "articles" which together make up the principle itself.

[1] Published in the *Monist*, 1918–1919.

Preamble: **The world consists of atomic facts which are constituted by basic particulars exemplifying basic qualities and standing in basic relations. With few, if any, exceptions, the "things" of common sense are logical constructions and would not appear in a list of the basic constituents of the world. Even more obvious is the distinction between simple (basic) and complex universals (qualities and relations). All particulars and all universals can be *described;* basic particulars and simple universals can not be *analyzed.* The principle we are formulating is concerned with basic particulars and simple universals.**

Whatever may be the proper analysis of thought, there are two ways in which a thought can be *about* a particular universal: (1) directly; (2) descriptively. These two modes of *aboutness* correspond to the logical distinction between *names* and *descriptive phrases.*

Article I: Particulars. **A thought can be directly about only such particulars as the thinker is acquainted with at the time of the thought.**

From the standpoint of the epistemologist, a language is always *someone's* language *at a time,* for it contains *names,* in the strict sense, of such particulars only as the user of the language is acquainted with at the time the language is used.

Article II: Universals. **A thought can be directly about only such (simple) universals as the thinker is acquainted with at the time of the thought. A thinker can be acquainted with only such (simple) universals as have been exemplified by particulars with which he has been (or is then) acquainted.**

From the standpoint of the epistemologist, a language is always someone's language at a time, for it contains *names,* in the strict sense, of such (simple) universals only as the user of the language is acquainted with at the time the language is used.

I am now convinced that this "principle" is a mistake, and that, together with all "principles" of similar import, it crystallizes and perpetuates a confusion between two distinguishable aspects of the relation between sign-behavior and the world. Of this, more later. Let us first lend a friendly ear to a familiar argument.

II

In order to understand the influence of "principles" such as the above on recent philosophical thought, we must see how they fitted in with developments in logical theory. We have taken account of some of these developments in the very formulation of our principle, but it is by virtue of a close association with that specific logical achievement which is Russell's theory of descriptions that the Principle of Acquaintance made its full impact on contemporary epistemology. Our next step, therefore, must be a brief statement of the fundamental contention of this theory. We shall begin by formulating it as a purely logical thesis, ignoring those broader epistemological issues which peer over the logician's shoulder. We shall write as a Russell might have written who, seeking to avoid the logical paradoxes involved in the traditional

account of descriptive phrases, was—unlike the historical Russell—completely unaware of the problems of philosophy, and who did not worry about *aboutness* and the nature of the *name relationship*. Such a Russell might well have summed up his theory of descriptions as follows:

"Let 'x_1' 'x_2,' 'x_3,' ... be the names of basic particulars, and 'f,' 'g,' 'h,' ...; 'Q,' 'R,' 'S,' ... the names, respectively, of simple qualities and relations. Now it is clear that a name isn't a name unless it names something. But what of descriptive phrases such as "the f"? Do they belong to the category of names? If so, then either "the f" is nonsense or else *the f* exists. Since descriptive phrases which do not have application are nevertheless meaningful, they clearly are not names. "The f exists" is a meaningful statement which may well be false. Its sense is given by a conjunction of two sentences neither of which contains a definite description. These sentences are:

$$(1) \qquad (Ex)\ fx.$$

$$(2) \qquad \sim (Ey)\ fy\ \&\ y \neq x.$$

Together these sentences say that of all the particulars in the world, at least one and at most one exemplifies f. That these sentences are about all the particulars in the world can be seen by remembering that the first sentence, "$(Ex)\ fx$," is the defined [2] *equivalent* of

$$(1') \qquad fx_1 \vee fx_2 \vee fx_3 \vee \ldots.$$

We thus see that *descriptions* rest on *names*, and that *we can refer to one particular by means of a description only by virtue of referring to all particulars by means of names.* To be sure, it doesn't *look* as though in using the phrase "the f" we are, even if only indirectly, using the names of all particulars, but from the standpoint of the logician that is exactly what we are doing, and if that is a paradox, I leave it to the philosophers to puzzle it out."

III

We are now in a position to lay bare the skeleton of a train of reasoning which takes this brief statement of the theory of descriptions as its point of departure, and leads, *via* the Principle of Acquaintance, to an epistemology characteristic of much recent empiricism, if rarely held in a completely explicit form. It will

[2] This account of the existential operator will come under scrutiny at a later stage of our argument. Even the reader who is suspicious of it must grant that it has played an important rôle in the development of modern logical theory.

be convenient to develop this reasoning in the form of a dialogue between our "Russell"—whom we have supposed innocent of all puzzles relating to our knowledge of the external world—and a philosophical *alter ego* who, of empirical bent, is making his first acquaintance with modern logic, Cantabrigian by name. As the dialogue begins, Russell has just finished the above statement of his theory of descriptions.

Cantab. Your theory of descriptions is, indeed, a most valuable contribution to logical theory, and an exemplary specimen of philosophical analysis. But how can you say that the description of a particular (or of a universal, for that matter) is, from the standpoint of a logician, an expression which contains the names of all particulars (or universals) or is the defined equivalent of such an expression? Surely it is clear not only that we can not name all particulars (or universals), our language doesn't even begin to contain such a list of names! Your account of the relation of descriptions to names must be mistaken.

Russell. I don't see how it *can* be mistaken. How can a language have a greater scope than the names it contains? I will grant that we can not *utter* the names of all particulars in one breath (or in one life-time, for that matter), but the name "x_1" is not itself an utterance. The name "red" is no more an individual utterance than *redness* is an individual red patch. In some sense which, as logician, I can not clarify, a language has an existence or reality over and above the utterances which are its tokens. It is humanly necessary to use tokens of "$(Ex)\ fx$" rather than tokens of the definitionally equivalent expression, "$fx_1 \vee fx_2 \vee fx_3 \vee \ldots$." But the language contains the latter expression in its entirety, even though we are unable to token more than an infinitesimal segment of it. I will admit that there is much here that I can not explicate, but as logician I must stand firm. *A language can describe no further than it names.* I hasten to add, however, in accordance with the distinctions I have drawn above, that *a user of language can describe further than he can utter names.*

Cantab. You logicians are all alike! Adept at manipulating abstractions, you can not see what is before your eyes! Languages are *human* facts, and like other human facts, they are clumsy, imperfect, and incomplete. French, German, Bantu . . . *these* are languages. They are historical facts. They are born, they grow, they die. I agree that the English word "red" is not a single utterance. It is, however, a *class of utterances,* a class which can only be defined in sociological, historical, psychological—in short, anthropological—terms. Can you seriously say that English, or German, or Bantu contains names for all particulars and (simple) universals? Furthermore, a language isn't a mere set of utterance-classes. It finds its existence in occasions on which utterances are used as linguistic utterances. Words, to be sure, have meaning, but it is more accurate to say that words have meaning *for users of words.* Indeed, it is primarily *utterances* which have meaning, and to say that a word (as utterance-class) has meaning, is to say that each event which is properly an utterance or token of the word (and not a mere *parrotting*) has meaning.

Russell. I must admit that I have been thinking of a language as an ideal system, tidy and complete to an immeasurably greater extent than any historical language. Yet I would have said that my analysis applies to French, German, and Bantu, so that in some sense I must have been talking about

sociological facts of the kind you have been mentioning. You are a philosopher. Can you resolve my perplexity?

Cantab. To the epistemologist, the key to the understanding of the human cognitive enterprise is the concept of the *given*. In whatever manner knowledge may be said to extend in scope beyond the given, *givenness* is the fundamental mode, if not of knowledge itself, then of being within the domain or purview of knowledge. Again, in whatever manner meaning may be said to extend in scope beyond the given, *givenness* is the fundamental mode, if not of meaning itself, then of being within the domain or purview of meaning. Whatever the heights that can be scaled by piling language habit on language habit, whatever, indeed the internal structure of language habits themselves—a problem we gladly leave to the psychologist—this much is clear to the epistemologist who is worth his salt:[3] *the towering edifice of language rests on the confrontation of sign-event with datum in a field of acquaintance.* It is not enough to say that a name isn't a name unless it names something (has a *nominatum*). This axiom can itself be understood only in terms of the more fundamental principle that only a sign-event whose referent, be it a universal or a particular, is *given* to the user of the sign-event can be a *name.* Indeed, name and nominatum must fall together in one field of direct awareness. To the epistemologist who penetrates below the anthropological standpoint I was presenting a moment ago to shake you out of your naïve linguistic realism, language is by its very nature *datum-centric.* It is in the given that he finds the cash value of the vast structure of linguistic habits and events which is studied in so many ways by the various sciences of Man.

Russell. I find your argument which moves from language as studied by empirical linguistics to its roots and purchase in the given quite persuasive. Unfortunately, however much your interpretation of language and meaning may appeal to me as a budding epistemologist, as a logician I am puzzled and unhappy. In my unenlightened days I thought of a language as an ideal structure so correlated with the world that (in addition to its specifically logical devices) it contains a name for each basic particular and for each simple universal ingredient in the world. Now I am being driven to hold that a language can contain *names* for only what is surely a vanishingly small portion of the ingredients of the world, namely, the elements of *someone's* field of acquaintance—including universals as well as particulars—*at a time;* the language itself being a set of sign-events within that same field of acquaintance. But if the names a language contains are as limited as this, how can the user of the language refer to items (universals as well as particulars) which fall beyond the scope of this momentary field of acquaintance? Does not your theory of names commit you to a semantic solipsism of the present moment? Indeed, how could one entertain such a meaning as *now?* for surely this meaning intrinsically involves the contrast meaning *then!*

Cantab. (*Startled*) But surely it is you who gave us the answer to this question! It was your distinction between *names* and *descriptions* which enabled the epistemologist to draw the distinction between *knowledge by acquaintance* and *knowledge by description* which disposes of the pseudo-problem into which you have talked yourself! We refer to objects which are not given by means of descriptive phrases, thus: "*the object which* I shall see a moment later than *this.*" It is by the use of descriptions that we refer to the world of which our data constitute such a vanishingly small part.

[3] I hasten to remind the reader that Cantabrigian speaks for himself, though I find his remarks interesting.

Russell. No! No! That won't do at all. We are going around in a circle. The theory of descriptions as I formulated it above rested on the very conception of language of which you have so vigorously tried to disabuse me. You will remember that I claimed that a sentence involving a description is logical shorthand for a set of sentences involving *the names of all items of the type to which the descriptum belongs.* Thus, we saw that, of the two sentences which explicate the meaning of "the f exists," the first, namely,

$$(Ex)\ fx$$

is the defined equivalent of

$$fx_1 \vee fx_2 \vee fx_3 \vee \ldots$$

which is a sentence of which I have tokened only the first three alternants. Indeed, if we suppose that the world consists of a finite set of particulars whose number is t, then the sentence, "The f exists," is equivalent to the following expression:

$$\begin{array}{ll} & fx_1 \,\&\, -fx_2 \,\&\, -fx_3 \,\&\, \ldots\, -fx_t \\ \text{or} & -fx_1 \,\&\, fx_2 \,\&\, -fx_3 \,\&\, \ldots\, -fx_t \\ \text{or} & -fx_1 \,\&\, -fx_2 \,\&\, fx_3 \,\&\, \ldots\, -fx_t \\ & \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ \text{or} & -fx_1 \,\&\, -fx_2 \,\&\, -fx_3 \,\&\, \ldots\quad fx_t \end{array}$$

It surely follows from this analysis that if all *nominata* are *data-here-now*, then descriptive phrases can not possibly enable one to refer to what is *not* a *datum-here-now.* That would indeed be to pull from a top-hat a rabbit that wasn't there! That is the business of magicians, not logicians, and, alas! even magicians only *seem* to do it.

Cantab. Can it really be that your theory of descriptions is infected with this naïve conception of a language as an ideal structure which covers the world like a metaphysical blanket? But wait! Surely the theory of descriptions says only that "The f exists" is equivalent to "$(Ex)\ fx\ \&\ (y)\ fy \supset y = x$." It is your interpretation of the latter as the defined equivalent of an expression which involves all the names of the language which is at fault. In short, the trouble lies in your account of the existential operator. It may be helpful nonsense to say that to an angel whose world was present in one field of acquaintance, "$(Ex)\ fx$" would be logically equivalent to an alternation of atomic sentences whose constituents were *names.* But for us there can be no such equivalence. In our language, "$(Ex)\ fx$" is not an *abbreviation.* It—or "$(x)\ fx$," whichever one takes as primitive—is a *basic* logical expression. More accurately, "$(E_)$ —_" represents a primitive logical operation, for, to put it bluntly, *variables are not logical constructions out of names,* as you suggest. They are *blanks.* The logical meaning of general operators lies in the rôle they play in rules relating to the filling of blanks and in rules relating expressions involving blanks to one another.

Russell. This is an interesting suggestion, though I am not quite sure that I grasp what you are driving at. Perhaps if you were to explain how it enables you to dissolve my puzzle as to how we can *mean* further than we can *name.* . . .

Cantab. Yes, I think that I can exorcise your puzzle now, though I must confess that before I thought of this new approach to the existential operator, you had me worried. I now see that we must distinguish between two modes of empirical meaning. (1) The mode characteristic of *names.* Here there is a direct tie between the linguistic and the non-linguistic. Both

names (sign-events) and nominata fall within one field of empirical givenness. (2) A mode of meaning *built on* the former, but not *reducible to* it. This mode of meaning consists in the employment of general operators and variables. The empirical significance of expressions belonging at this level of language lies in the rules relating it to the first mode of meaning. Thus, we can go from "$(x)\ fx$" *to* "fa" where "a" is a name and thus has empirical meaning of the first mode. On the other hand, the unique contribution of this second mode of meaning lies in the fact that the use of expressions on this level *constitutes*, subject to an anchoring in the first mode of meaning, "a reference to the world as including but extending beyond the given." Empirical meaning proper is a matter of *givenness*. Reference to the *world* is a purely formal matter of the logical structure of our language. It has empirical significance or "cash value" only by virtue of the rules which tie general operators and variables up with names, and hence with empirical meaning proper.

We leave this unhistorical dialogue uncompleted. By isolating two of the many souls which vie in Lord Russell's breast, and causing them to argue, we have been able to reconstruct the dialectic which has manoeuvred many logically-minded empiricists, though never—completely—Lord Russell, himself, into the position which has come to be called "syntactical positivism."[4] We have not given the "Russell" of our dialogue a crack at this position, as formulated by Cantabrigian, for the obvious reason that the historical Russell has been far more adept at getting people into this quicksand than at getting himself out of it.

But what shall we say in reply to Cantabrigian? Here we must be brief, for our main purpose has been to *present* the above dialectic, rather than to dissolve it, a task which would take far more space, not to say insight, than we have at our disposal. Is it enough to point out that the psychology of human cognition is most certainly not built on the concept of a meaning relation which holds between sign-events and other items, particulars or universals, in one field of acquaintance? No, for the mistake which Cantabrigian makes is a more basic one which could be allied with sound psychological doctrine. It is that of taking the "designation relation" of semantic theory to be a reconstruction of *being present to an experience*. This mistake is the same whether combined with an adequate psychology of "experience" or associated with the pseudo-psychology of the "given." Semantic *designation* reconstructs neither "phenomenal givenness" nor "behavioral response to an environmental stimulus." In so far as semantic designation is a reconstruction of an aspect of man's adjustment

[4] The term "syntactical positivism" does not have the meaning of "positivism in its syntactical phase" as opposed to "the semantic phase of positivism." Syntactical positivism is a position which is very much alive, and is defended by several positivists who have found a place in their theories for the pure semantics of Tarski and Carnap.

to his environment by means of sign-behavior, it concerns rather the relation of sign habits to features of the environment *in abstraction from particular acts of experiencing these features.* It is the *pragmatic* concept of *verification* which reconstructs the *meeting* of *language and world* in a cognitive situation. The student of pure semantics will recall how minor a rôle the type-token distinction plays in treatises on the subject. It is mentioned in the early pages, but does not enter into the definitions and theorems themselves. On the other hand, pragmatics, from which, after all, semantics is an abstraction, is concerned with the *contact* of a linguistic structure with the world, and this contact *essentially* involves linguistic tokens or sign-events. It is in pragmatics that we find the theory of *demonstratives,* words such as "this," "here," "now." Words of this type involve an intrinsic relation to a particular cognitive situation. Here is the crux of the matter. Cantabrigian is confusing between *names* and *demonstratives.* Names as designators are in the object language. They can be tokened many times with each token having the same meaning. Demonstratives are in a meta-language, and not only are essentially sign-events, having a different sense on each occasion of their use, but also refer to the confrontation of an object-language sign-event with an experienced situation. It is *demonstratives* and not *names* which are limited in their reference to items belonging to the same experiential situation in which they occur.

We are thus in a position to distinguish the question, "How can a language *mean* further than it *names?*" from the question which has so often been confused with it, "How can a language means further than a *this-here-now?*" This, in turn, enables us to call attention to an important truth in the Cantabrigian position. It is indeed the case that our use of variables and general operators or their counterparts in common usage, is not a mere shorthand for the use of the names our language contains. It is a sound insight which leads him to suggest that the reach of our language beyond the items for which it contains names *consists in* the use of variables and general operators. These are undoubtedly essential features of the structure of linguistic habits by means of which we adjust to our environment. But it is still more important for the philosopher to see that *these assertions belong to the empirical anthropology of sign-behavior.*

Is there, then, no truth in the contention made by our unhistorical "Russell" that a language *can not* mean further than it names? This contention, if we lay aside semantic complications, is exemplified by the assertion that

$$(Ex)\, fx =_{Df} fx_1 \vee fx_2 \vee fx_3 \vee \ldots .$$

I want to suggest that *in the logical frame of reference,* where it obviously belongs, this is a perfectly legitimate statement. We must not confuse between an "understanding of the logician's utterance" which consists in an empirical description and explanation of the utterance in terms of the linguistic habits and limitations of the logician as a source of utterances, and that "understanding of the logician's utterance" which consists in a *re-enactment* of the utterance. To understand in the latter sense is to *do logic.* What, then, do logicians do? In what does their vision of the infinite horizon of the possible consist? What is the relation of their activity to the empirical psychology of sign-behavior? In what sense do they talk about this behavior? These are exciting questions. I am happy that I have not committed myself to answer them on this occasion.

WILFRID SELLARS

UNIVERSITY OF MINNESOTA

BOOK REVIEW

Humanism as a Philosophy. CORLISS LAMONT. New York: Philosophical Library. 1949. 368 pp. $3.75.

This book is an exposition and defence of the cosmological doctrine of naturalism or materialism, and of the ethical claim that that doctrine is not only true but quite adequate to give man happiness and to justify the rules of morality. The vague and historically ambiguous name "humanism" is chosen as the best name for the doctrine, though the author disagrees with those so-called humanists who wish to have their anti-religious philosophy regarded as a sort of religion. For Dr. Lamont, "humanism" is a philosophy which should replace any and all religions.

Of the six chapters comprising the book, Chapter I considers the various meanings of the term "humanism"; Chapter II traces its history from the ancient Greek Sophists to the present; Chapters III and IV present the main arguments for regarding mind or personality as inseparable from body, and the emotional satisfactions of that doctrine, with much interesting comment on the harmfulness of dualism and supernaturalism; Chapter V is an account of scientific method; and in Chapter VI, after a discriminating defence of utilitarianism and secularism, the book is brought to an impressive conclusion by a sociological discussion of the meaning and promise of a planned society.

In spite of its very vivid account of the discovery of the cause of yellow fever, the fifth chapter describing the procedures of sci-

ence seems to be somewhat below the standard of the other chapters. Perhaps the reason is that the author is here trying to fit his own thought into a scheme already developed by others. When a scientist is confronted with a problem of discovering the cause of a phenomenon, his first step is to envisage and enumerate the various possible or hypothetical causes. His second step is to find the degree of correlation (positive or negative) between each of these possible causes and the event in which he is interested. Each of these two main stages of his inquiry can be, and often is, variously divided and subdivided. He will supplement his creative imagination by knowledge of what his predecessors have accomplished, and the hypotheses entertained can be employed either directly or indirectly by deduction of other hypotheses from them. The second step of ascertaining the degree of correlation can also be divided and subdivided; and, for good measure, it will always be possible to throw in the mere recognition of the problem as a distinct stage of its solution. The appreciation of the two fundamental phases of an inductive inquiry, and the varying and arbitrary subdivisions which can be made within each phase, are, I think, insufficiently taken account of by our author.

Moreover, it is in this connection that Dr. Lamont takes over a mistake first made by William James and frequently copied by later pragmatists. An idea like the heliocentric theory of the planetary system or the atomic theory of matter may be verified indirectly by the satisfactory consequences to which it leads. We note that it works well and so it is sometimes claimed that we are thus delivered from a "spectator theory of knowledge" and freed from the common-sense meaning of *truth* as an agreement or correspondence of our notions with the facts of reality. But James, Lamont, and others forget that when ideas "work" it is not just by a happy accident or a miracle of God's grace. There is always a *reason*—the very prosaic reason that the ideas were in antecedent relational harmony with the facts. That, and that only, is the reason why our ideas are relevantly valuable. They are *useful* because they are *true;* they are not true because they are useful. If that be a "spectator theory," make the most of it!

It is, however, Chapters III and IV that are the most important, and in them our author is at his best. Here we find all the arguments for materialism or (to use the more timid and genteel word that has become fashionable) "naturalism." The world has no soul or God, and we too are nothing but our perishable bodies. We have got to take this thought and we had better like it, or at least make the best of it. The many arguments listed by Dr. Lamont are not essentially different from those of Lucretius. They

can all be boiled down or summed up in the inference that, as mind varies with body, therefore it is a function or adjective of body, dependent on it and inseparable from it.

Dr. Lamont does not take account of the traditional answer that the co-variance of two factors at best proves that one is a necessary condition, rather than a sufficient cause, of the other. To use James's illustration: If in a room enclosed by glass of varying degrees of transparency we find more or less light where there is more or less approximation to transparency, we could infer either that the light was produced by, or was transmitted by, the glass. And so the brain, so far as the facts can inform us, can be either a *producer,* as materialism believes, or, as James and Bergson believe, a *transmitter* of mind. The mere fact that mind is always found where body is found, and that where the body is either more elaborately organized or is injured, correspondingly the mind is more organized or else is injured etc., is familiar enough. Mr. Lamont dwells upon these correlations effectively, especially in inveighing against immortality. But it does not occur to him to realize that wherever as in life and mind there is anything *cumulative*—e.g., retention of the past in the present—it is difficult to imagine a reverse process by which, at death, the succession of momentary phases is restored. Here, as in many other cases, the unities of the mental seem quite different from the pluralities of the external and observable events of physical nature. The old materialism was superior to the present-day "naturalism" in that it made a valiant if unsuccessful attempt to deal with this problem instead of relying smugly and indolently on the contemporaneous unpopularity of "dualism." In the realm of mind, qualities and especially *values* seem to have direct causal efficacy not found in matter. The *there* seems to be and to act together with the *here,* and the *then* with the *now.* No *feeling of succession* can be reduced to a *succession of feelings.* And I must repeat that a mere co-presence and even a co-variance of the two orders can not at all explain one as a product of the other. Perhaps the recent rise of "cybernetics" may do something to awaken the naturalists to their methodological slovenliness, but in none of Dr. Lamont's illustrations could I find any realization of the real problem to be faced.

Notwithstanding these qualifications, the work of Dr. Lamont possesses many and varied merits. It is for the most part adequate in its exposition, and it is very clear in the arrangement of its main contentions and in their application to a great diversity of topics. In fact, the argument is throughout so persuasive that the reader is apt to forget the many considerations which make the author's position appear both false and somewhat meagre.

From the earliest times it has been recognized that the processes of Nature, from a knowledge of which our conception of the cosmos is born, are of two contrasting kinds. There are those processes, like the falling of rain or the movement of clouds, in which the causality (in so far as discovered) seems quite clearly *ab extra* or purposeless; and then there are those other processes, like the movements of ourselves and of animals, where the causality suggested is *ab intra* or purposeful. The question as to which of these opposite types of behavior is the more fundamental has been and, I think, still is the deepest question of philosophy. Materialism has with ever-increasing success played up the mechanistic or *ab extra* type of explanation, while idealism and dualism have chosen the other type which has the seeming advantage of characterizing those activities of ours of which we have primary experience.

It is, as Lamont realizes, a matter of only secondary difference as to whether the ultimate particles (of which, according to the materialists, the world is composed) are the hard little elements imagined by Democritus, Lucretius, and Sir Isaac Newton, or whether they are in the modern fashion conceived of as waves or systems of waves. Either of these conceptions accords with the materialistic *Weltanschauung* so long as the processes of change are envisaged as purposeless or "blind." On the other hand, if the activity has to be explained in terms of the future end or purpose as somehow contributing causally to its own consummation, the entity in question may be thought of as a transcendental ego, an old-fashioned soul, or in some other way. And the metaphysics then involved is *idealistic* or, if taken together with the opposite type of process exemplified in the body, is *dualistic.* Dr. Lamont realizes this clearly enough, I think, but he fails to see that dualism or idealism is not a mere case of "wishful thinking" but is an inference based upon a cosmic extrapolation of the type of process which seems to characterize the mind and life obviously manifested in ourselves. This may be regarded as the general and over-all explanation of why materialism, in spite of its increasing achievements, has not as yet won a complete victory.

There is a further and more specific difficulty with the mechanistic view. It is mentioned by Dr. Lamont but passed over by him rather casually. I am referring to the curious tendency of the energies of Nature, while maintaining their quantity unchanged, to pass from a more concentrated and differentiated condition to a more dissipated and uniform condition. Tension, or potential energy, if not held in balance, tends to pass into the kinetic energy or motion of masses; and the latter in its turn tends to become

molecular motion or heat, the ultimate consequence of which is the electronic or wave motion that we call light. This augmentation of the pulverized and dissipated form of energy, and corresponding decrease of the concentrated, differentiated, and organized form of energy is everywhere noted. It is a sort of general katabolism —a way of death that characterizes the measurable things of Nature; and the more recent physical science suggests that mass itself is a form of energy, and as such may be expected ultimately to be transformed into something akin to light waves.

In life and mind, however, something like a process opposed to the increase of entropy appears to be indicated. It would seem natural if not necessary to infer, as either antecedent or contemporary to the running down of things, a running up. Before there can be spending, there must be saving; before mass and the complex organizations of energy can be dissipated into waves, they must have been integrated, concentrated, and individualized. And inasmuch as the living and *a fortiori* the mental appear to involve the formation and increase of potential energy, as I have for a long time maintained, it would not seem too great a stretch of the imagination to call these anti-entropic processes the way of life, in contrast to which the more general increase of entropy could be called the way of death. And before there can be death there must have been life.

The world in which we find ourselves seems to contain each type of process, and Dr. Lamont would seem to be a little unfair in relegating the anti-entropic (which, on a cosmic scale, becomes the theistic) to the entropic or mechanistic changes of dead matter; the more so as a very important chapter in the story of Nature is the uniform and glorious increase, at least on this planet, of the living in relation to the lifeless. This part of the story we call evolution.

Moreover, it is important to consider the cultural and ethical aspects of this situation. The religious tradition has usually regarded the course of the world as originating in some sort of "Fall." It is from man's first disobedience that sin, pain, and disorder invade the world. "Redemption" is called for, and in general the course of Nature must be repudiated. Dr. Lamont correctly recognizes that theism is the belief in a power not ourselves that makes for righteousness; but it may be that that Power is the life of Nature as a whole. Then if in religion we experience a union with it, we should be not negating or suppressing ourselves; we should, on the contrary, be making our life richer and more affirmative. Not the asceticism of Calvin, Augustine, or Paul, but the "more abundant life" radiantly exemplified by Christ. Or, if we use the terms of Greek mythology, it is not Zeus, the tyrant,

but Prometheus, the divine Rebel, whose spirit we are to share. Religion as thus interpreted would indeed have the supernaturalism rightly recognized by Dr. Lamont as pertaining to its essence, but at the same time it would not be life-negating but life-affirming, not the Neo-Orthodoxy of Kierkegaard, Barth, or Reinhold Niebuhr, with its treatment of sin as central, but what we might call a "neo-heterodoxy," having for its central doctrine the hope of unending progress.

The nature and achievements of our own species are perhaps somewhat over-rated by Dr. Lamont. In his goodness, man is certainly not Christ; and even in his evil, man hardly attains the stature of Anti-Christ. He is, in short, a bit commonplace. And for Nature to culminate in him would be an anti-climax. Far richer, deeper, and higher than man himself is that great upward trend from amoeba to man and—if not, as Nietzsche hopes, to "Beyond Man"—at least to the ideals which man, poor as he is, can clearly enough envision. Union with this ascending power would be what I have called *Promethean religion.* I would not demand of our author that he espouse such a religion, God forbid, but I think that at least he should recognize its possibility. The real alternative to humanism would then be not anti-humanism but humanism-plus, a belief to which (at least on ethical grounds) Dr. Lamont could hardly object.

With reference to the plea for a planned society, with which Dr. Lamont brings his book to an eloquent ending, I would say only that, however noble the abolition of private capital may be, it involves a commitment to rationalistic rather than to inductive decisions. To spend the comrades' money in building a queer airplane contraption such as that of the Wright brothers, or in writing and publishing poems like those of Gertrude Stein in which sound would seem to be divorced from meaning ("pigeons on the grass, alas"), or to manufacture bubble gum and purple lipstick may be good or may be bad; there is a lot to be said in favor of the scientific or experimental method of trying the thing out. If it works well and people really like it, you can as its proposer reap the profits; and if it works badly and people have for it dislike or indifference, you must shoulder the losses. We will not ask even the wisest and most upright of commissars to make decisions in advance. The economic enterprise, like the scientific hypothesis, should be tested experimentally and at the risk and expense of those who believe in it. Let us give the Devil his due and admit that in this respect the system of *laissez-faire* or free enterprise, in spite of the attainment of such great collectivist and planned achievements as the TVA and the U. S. Post Office, would in gen-

eral appear to be in line with the experimental procedure of science. It is hardly too much to demand of our friend that he temper his socialistic enthusiasm with this recognition.

I should be very sorry to believe that any of the criticisms that I have offered were to interfere with the appreciation of Dr. Lamont's book. I would say again, in line with what I said at the outset of this review, that I think *Humanism as a Philosophy* can be regarded as the best presentation and analysis of its subject to be found in contemporary philosophy.

WM. PEPPERELL MONTAGUE

BARNARD COLLEGE

BOOK NOTES

The Greek Cynics. FARRAND SAYRE. Baltimore: J. H. Furst Co. 1948. 112 pp. $1.50.

The always rather thankless task of salvaging the intellectual content of severely anti-intellectual doctrines becomes especially frustrating in the case of Cynicism, for the strict Cynics apparently wrote little or nothing themselves and made little or no effort to attract disciples. Assembling the different references made by other ancient writers to the Cynics, Dr. Sayre loosely strings together what he regards as their characteristic doctrines. Usually the more tantalizing the references are, the more obviously are they unreliable evidence of the specific character of Cynicism itself, since they betray at best these other writers' ulterior philosophic convictions, and at worst their taste for spiteful gossip or for entertaining legend. However, these references (translated by Dr. Sayre into good English) still remain general evidence of harsh features of Greek thought and behavior that some historians overlook, when they reconstruct the Greek mind as simply an intellectual vision of a harmonious universe, and Greek life as a response to this vision. Whatever the historical plausibility of his suggestion, Dr. Sayre is himself perhaps too ready to accept this overly simple reconstruction when he suggests that because "Cynicism in Greece was a misfit," its origin is Indian.

ROBERT CUMMING

COLUMBIA UNIVERSITY

La totalidad psíquica. FELIX KRUEGER. Prólogo y traducción de Carlos Astrada. Buenos Aires: Instituto de Filosofía. 1945. 249 pp. $8.50 m/arg.

Carlos Astrada, an Argentine disciple of Heidegger's, has translated into Spanish three of Krueger's papers defending the *Ganz-*

heit theory of psychology. From the translator's preface we learn that the former head of the University of Leipzig had taught psychology for a short time in Buenos Aires some forty years ago, bringing to Argentina the new anti-associationist currents in psychological theory. Professor Astrada considers Krueger's *totalista* approach to the psychical one of the most influential and promising directions in contemporary psychology, especially in its insights on the "primacy" of the *emotional* side of life, a side reportedly neglected by the Gestalt school.

P. R.

NEW BOOKS AND JOURNALS

Grenet, Paul: Les origines de l'analogie philosophique dans les Dialogues de Platon. (Éditions Contemporaines.) Paris: Boivin & Cie. 1949. 299 pp.

Philosophische Vorträge und Diskussionen. Bericht über den Mainzer Philosophen-Kongress, 1948. Herausgegeben von Georgi Schischkoff. Sonderheft 1 der *Zeitschrift für Philosophische Forschung*. Wurzach/Württ: Pan-Verlag Rudolf Birnbach. 1949. 10.80 D.M.

De Marquette, Jacques: Introduction to Comparative Mysticism. New York: Philosophical Library. 1949. 229 pp. $3.75.

Barr, Stringfellow: The Pilgrimage of Western Man. New York: Harcourt, Brace and Company. 1949. xiii + 369 pp. $4.00.

MIND. Vol. LVIII, No. 231. The Logic of J. S. Mill: *R. P. Anschutz.* On the Logic of Complex Particulars: *Wilfrid Sellars.* On Understanding: *C. H. Whiteley.* Discussions—God's Non-existence. A Reply to Mr. Rainer and Mr. Hughes: *J. N. Findlay.* "Selves": *A. G. N. Flew.* Promises: *C. K. Grant.* Bentham and the Utilitarian Principle: *P. Burne.*

PHILOSOPHY AND PHENOMENOLOGICAL RESEARCH. Vol. IX, No. 4. Mechanism, Physicalism and the Unity of Science: *L. S. Feuer.* Dalton's Atomic Theory and Its Philosophical Significance: *B. M. Kedrov.* On a Science of Ethics: R. L. ACKOFF. Icon, Index, and Symbol: *A. W. Burks.* Moritz Schlick and Modern Empiricism: *Tscha Hung.* Discussions—Experience and Existence: A Comment: *John Dewey.* The Status of the Potential: A Reply to Professor Dewey: *S. J. Kahn.* Between Rousseau and Marx: *Nathan Rotenstreich.* Remarks on the Distinction between Analytic and Synthetic: *L. W. Beck.* Reply to Professor Beck: *John Wild* and *J. L. Cobitz.* The Epistemology of the *A Priori: R. S. Hartman.* Comments on Mr. Hartman's "The Epistemology of

the *A Priori: John Wild* and *Joseph Cobitz.* The Constitution of Error in the Phenomenological Reduction: *Henry Winthrop.*

ANALYSIS. Vol. 9, No. 6. Truth: *P. F. Strawson.* Professor Ayer's Analysis of Knowing: *Gustav Bergmann.*

PHILOSOPHY. Vol. XXIV, No. 90. The Parmenidean Dogma: *W. T. Stace.* The Organic State: *G. R. G. Mure.* Bishop Butler's View of Conscience: *D. D. Raphael.* The Aesthetic and Sciences: *J. C. Gregory.* The Verb "To Cause": *Gerald Abrahams.* Discussion—"Human Knowledge—Its Scope and Limits": *L. J. Russell.* Philosophical Survey—Philosophy in Germany.

REVUE DES SCIENCES HUMAINES. Fasc. 53. Le problème Naigeon: *J. Pommier.* Sophie Volland et la maturité de Diderot: *P. Mesnard.* Rousseau et Diderot: *A. Adam.*

AUSTRALASIAN JOURNAL OF PHILOSOPHY. Vol. XXVII, No. 1. Anderson and the Tractatus Logico-Philosophicus: *D. A. T. Gasking.* The Relation of Inner Experience and Overt Behaviour: *W. M. O'Neil.* Stout's Theory of Universals: *D. J. O'Connor.*

RIVISTA DI FILOSOFIA. Vol. XL (IV della Terza Serie), Fasc. 2. L'utopia di Ippodamo di Mileto: *I. Lana.* Impegno pratico e valore: *G. Marchello.* La validità metafisica del dubbio e il problema della fede: *G. Cairola.* Nuova tematica dell'esistenzialismo: La paura d'essere: *A. Pastore.*

ARVHIV FÜR PHILOSOPHIE. 3/1. "Dr. Fausti Weheklag": *Fritz Kaufmann.* Franz von Baader und der abendländische Nihilismus: *Ernst Benz.* Schellings Einfluss in Russland (Sergéj A. Júrjev und Vladímir S. Solovjév): *Ludolf Müller.* Kritischer Idealismus und jüdische Theologie: *H. J. Schoeps.* Schellings Nachlass. Ein Bericht: *Horst Fuhrmans.*

NOTES AND NEWS

We learn with regret of the death in a street accident of Erich Frank, Professor of Philosophy at the University of Pennsylvania, on June 27, 1949, in Amsterdam, The Netherlands. His age was 66.